CASE REPORT

Cavernous haemangioma in the coronary sinus

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Abstract

A 58 year old man with a history of cerebral infarction was admitted to hospital with chest discomfort and dyspnoea. He had no history of precordial chest discomfort. Angiography and left ventriculography showed that coronary fistulas connected the coronary sinus with the left circumflex and right coronary arteries. His coronary sinus did not communicate with the right atrium, draining instead into a persistent left superior vena cava. Angiography showed a mass, suspected to be a thrombus, in the coronary sinus. Transoesophageal echocardiography confirmed the presence of a mass in the atrioventricular groove. The mass was removed at surgery and proved to be a cavernous haemangioma.

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Keywords: coronary fistulas; persistent left superior vena cava; cavernous haemangioma; coronary sinus

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Masses in the coronary sinus are very rare. Thrombus formation in the coronary sinus in the setting of right heart catheterisation has been reported,[1] but there have been no reports of tumours in the coronary sinus. We describe a patient with a cavernous haemangioma in the coronary sinus.

Case report

A 58 year old man with a history of cerebral infarction was admitted to hospital in October 1995 with chest discomfort and dyspnoea. He had no history of precordial chest discomfort. His heart rate was 100 beats/min and his blood pressure 150/80 mm Hg. Chest radiography showed pulmonary vascular congestion and a cardiothoracic ratio of 50% (15/30 cm). Electrocardiography showed atrial fibrillation with normal ST-T segments. The patient's heart failure improved with diuretics and vasopressers.

Coronary angiography was done in November 1995. Haemodynamic data were normal. Left ventriculography showed reduced anterior wall contraction. No coronary stenoses were noted. There were coronary fistulas from the right coronary artery and the left circumflex to the coronary sinus. The coronary sinus drained into a persistent left superior vena cava (SVC). No communication between the coronary sinus and right atrium could be identified. Angiography showed a mass in the coronary sinus (fig 1) that was suspected to be a thrombus. The great cardiac vein could not be seen angiographically and the left anterior descending coronary artery drained into the coronary sinus through the middle cardiac vein. Blood flow from the coronary arteries drained into the persistent left SVC through the coronary sinus and returned to the right atrium through the SVC. There was no right to left shunt.

Transthoracic echocardiography was performed before coronary angiography. However, the mass could not be detected using this technique. Using transoesophageal echocardiography (TOE), the mass was observed in the posterior portion of the atrioventricular groove (fig 2). Following CAG, the patient was treated with warfarin, and the mass in the coronary sinus was evaluated one year later using TOE. The size of the mass had not changed.

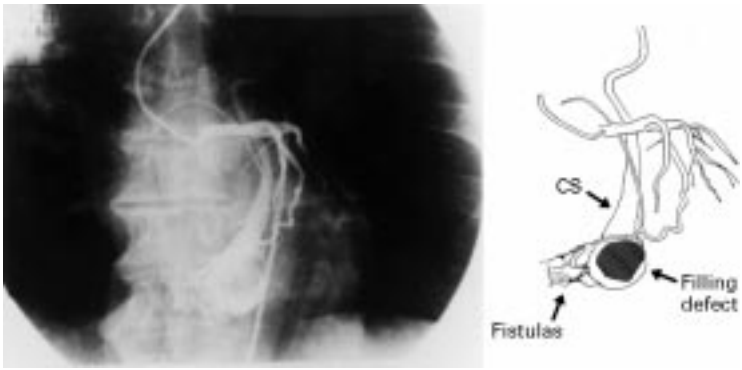

Figure 1 Coronary arteriograms showing coronary fistulas from the left circumflex to the coronary sinus, and an angiographic defect in the coronary sinus (CS).

SURGERY

In December 1996 the patient underwent surgery; a median sternotomy was performed under general anaesthesia. The right atrium was incised to find the coronary sinus ostium; however, no ostium was detected. The dilated coronary sinus was incised directly and the mass was exposed and removed. The fistulas from the coronary arteries were ligated. Finally, the closed coronary sinus was opened to the right atrium. The patient tolerated the surgery and had no postoperative complications.

HISTOLOGY

Histological study of the tissue from the coronary sinus revealed a cavernous haemangioma (4 cm × 3 cm) surrounded by old

Figure 2 Transoesophageal echocardiogram showing a mass in the coronary sinus.

thrombus, which also had endothelial cells and elastic fibres around the vessels.

Discussion

There are 30 reported cases of coronary sinus ostial atresia with persistent left SVC.[2] Our patient also had a tumour in the coronary sinus. Edwards *et al* reported that coronary sinus ostial atresia was commonly associated with other cardiac malformations, and these were present in 37.5% of the patients they studied.[3] In fact, all of the patients with coronary sinus ostial atresia in their study had persistent left SVC. Ramsaran *et al* reported a case of sudden cardiac death caused by primary coronary sinus thrombosis.[4]

In our study, the mass in the coronary sinus could not be detected with transthoracic echocardiography, but could be seen with TOE, which showed the mass to have heterogeneous echo density and smooth edges. Contrast computed tomography did not improve the image of the tumour. It may have improved in later images because it was a haemangioma. The persistent left SVC was also detected by computed tomography. To the best our knowledge, this is the first reported case of a haemangioma in the coronary sinus. We hypothesise that the thrombus formed around the mass because blood flow through the coronary sinus was very slow.

1 Figuerola M, Tomas M, Armengol J, *et al*. Pericardial tamponade and coronary sinus thrombosis associated with central catheterization. *Chest* 1992;**101**:1154–5.
2 Santoscoy R, Walters HL III, Ross RD, *et al*. Coronary sinus ostial atresia with persistent left superior vena cava. *Ann Thoracic Surg* 1996;**61**:879–82.
3 Edwards JE. Anomalies of the coronary sinus. In: Gould SE, ed. *Pathology of the heart*, 2nd ed. Springfield: Charles C Thomas, 1960:431–2.
4 Ramsaran EK, Sadigh M, Miller D. Sudden cardiac death due to primary coronary sinus thrombosis. *South Med J* 1996;**89**:531–3.